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Created by

Rittal GmbH & Co. KG
Auf dem Stützelberg
35745 Herborn, Germany

Quality management

Confirmation of the electrical properties of the new Rittal VX25 Ri4Power switchgear system

Just in time for the market launch of the new Rittal VX25 enclosure system, the successor of the TS 8, the Rittal Ri4Power switchgear system has also been adapted for use with the VX25 and its technical capabilities have been expanded and further improved.

The new Rittal switchgear system goes by the name "VX25 Ri4Power".

The following confirmation is based on the results of extensive, standard-compliant tests with the new VX25 Ri4Power switchgear system from Rittal carried out at accredited and internationally recognised institutes, and the results of carefully executed derivations from the previous system – the Ri4Power TS 8.

We hereby confirm that the Rittal VX25 Ri4Power switchgear system meets the criteria of IEC 61439 with regard to the following properties:

- Rated voltage U_n : 420 V / 690 V (see Table 1)
- Rated surge current resistance I_{pk} up to 220 kA (see Table 5)
- Rated short-time withstand current I_{cw} up to 100 kA (see Table 5)
- Rated short-circuit current $I_{cc} = 100$ kA (see Table 1)
- Testing of new N conductor system for I_{cw} of 60 kA (see Table 2)
- Testing of new PE/PEN conductor system for I_{cw} of up to 60 kA (see Table 3)
- I_{nc} of the main busbar (see Table 4 and 5)
- I_{cw} and I_{pk} of the main busbar (see Table 6)
- Maxi-PLS infeed with 45 S (2000 A), 45 (3000 A) and 60 (6300 A)



Andreas Wirth
Quality Management Laboratory

Herborn, November 04., 2021



Rittal's test laboratory is accredited with the German Accreditation Council (DAkkS) No. D-PL-17086-01-00 and Underwriters Laboratories Inc.

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Appendix 1

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Table 1: Switching off the switchgear in the enclosure for Form separation 1 - 4

Enclosure	Current	Test report no.
1-door	$I_{cc} = 100 \text{ kA} / 420 \text{ V}$	09750-19-0064
with partial doors	$I_{cc} = 100 \text{ kA} / 690 \text{ V}$	2018-0141502 and 09750-19-0064

Table 2: N conductor system

Busbar	Current	Test report no.
4x50x10	$I_{cw} = 60 \text{ kA} / I_{PK} = 132 \text{ kA}$	2018-0141502

Table 3: PE/PEN conductor system

Busbar	Current	Test report no.
1x30x5	$I_{cw} = 25 \text{ kA} / I_{pk} = 52,5 \text{ kA}$	10081-19-0342
1x30x10	$I_{cw} = 30 \text{ kA} / I_{pk} = 65,5 \text{ kA}$	09750-19-0064
2x30x10	$I_{cw} = 65,7 \text{ kA} / I_{pk} = 144 \text{ kA}$	08735-018-0550
1x40x10	$I_{cw} = 44,1 \text{ kA} / I_{pk} = 94,6 \text{ kA}$	09750-19-0064
1x80x10	$I_{cw} = 60 \text{ kA} / I_{pk} = 132 \text{ kA}$	08735-018-0549

Table 4: Inc of the main busbars (center of back area)

Busbar	IP54					IP2X					IP54/2X fan				Icw
	30 K	65 K	70 K	85 K	95 K	30 K	65 K	70 K	85 K	95 K	30 K	65 K	70 K	85 K	
	Inc [A]					Inc [A]					Inc [A]				
4x50x10	1200	1880	1940	2220	-	1520	2400	2520	2820	-	2580	3770	3910	4260	100kA ¹⁾
4x50x10	1200	1880	1940	2220	-	1520	2400	2520	2820	-	2580	3770	3910	4260	65kA ²⁾
2x50x10	960	-	1510	-	1750	1020	-	1610	-	1900	1500	-	2240	2470	65kA ³⁾

1) From cabinet width 800mm, a third holder floating in the middle of the field must be used

2) From cabinet width 800mm, use centrally art. no. SV 9686.820 from the SV 9686.820

3) From cabinet width 800mm, use centrally art. no. SV 9686.810 from the SV 9686.810



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Table 5: Inc of the main busbars (roof area) ⁴⁾

Busbar	IP54			IP2X			IP54/2X fan			I _{cw}
	30 K	70 K	95 K	30 K	70 K	95 K	30 K	70 K	85 K	
	[A]			[A]			[A]			
4x50x10	1525	2410	2860	1625	2585	3010	2350	3520	3840	100kA ⁵⁾
2x50x10	1160	1780	2040	1200	1800	2250	1660	2500	2700	65kA ⁵⁾
4x30x10	1220	1920	2250	1320	2150	2480	1820	2740	3000	70kA ⁵⁾
2x30x10	840	1320	1530	900	1440	1680	1250	1840	2000	50kA ⁶⁾

4) Module cubicles up to 800mm width and 70 kA without third holder in the main busbar

5) From cabinet width 800mm, a third holder floating in the middle of the field must be used

6) From cabinet width 1000mm a third holder floating in the middle of the field must be used

Table 6: I_{cw} and I_{pk} of the main busbars

Busbar	Current	Test report no.
2x30x10	I _{cw} = 50 kA / I _{pk} = 105 kA	2018-0141702
4x30x10	I _{cw} = 70 kA / I _{pk} = 154 kA	2018-0141702
2x50x10	I _{cw} = 65 kA / I _{pk} = 143 kA	2018-0141802
4x50x10	I _{cw} = 100 kA / I _{pk} = 220 kA	09750-19-0064 and 08735-18-550

Note on Table 6 regarding the number of busbar holders

Enclosure width [mm]	Number of holders [units]
400, 600	2
800, 1000, 1200	3

Table 7: Inc of main busbars (roof area) two supports each side

Busbar	IP54				IP2X				IP54/2X fan		I _{peak} I _{cw}
	30K	65K	70K	85K	30K	65K	70K	74K	30K	68K	
	Inc(A)				Inc(A)				Inc(A)		kA
2x 4x50x10	2720	4360	4600	5200	3400	5740	6050	6300	4500	6300	220/100



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